

WHAT IS CLAIMED

1. An apparatus for providing electrical continuity between two objects comprising:

a body with a top surface and a bottom surface, said body defining a plurality of pin

5 receptacles, each receptacle including a guiding slot, and;

a plurality of pins, each one of said pins being located within a different one of said plurality of receptacles, each pin including a planar centerbody with two edges, a first member extending from said centerbody and coplanar with said centerbody, a first cantilever beam extending from one edge of said centerbody at an acute angle relative to said centerbody, and a
10 second cantilever beam extending from the other edge of said centerbody at an acute angle relative to said centerbody;

wherein the first member of each one of said plurality of pins cooperates with said guiding slot of the corresponding receptacle to guide said pin within said receptacle.

15 2. The apparatus of claim 1 wherein said first cantilever beam is longer than said second cantilever beam.

3. The apparatus of claim 1 wherein the first cantilever beam of a first one of said pins includes a free end that extends over the centerbody of a second one of said pins.

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4. The apparatus of claim 3 wherein said plurality of receptacles are arranged in a matrix of rows and columns.

5. The apparatus of claim 1 wherein each said receptacle includes a second guiding slot, each said centerbody includes a second member extending from said centerbody and coplanar with said centerbody, and each said second member of each one of said plurality of pins
5 cooperates with said second guiding slot of the corresponding receptacle to loosely guide said pin within said receptacle.

6. The apparatus of claim 5 wherein said first cantilever beam, said first member, and said second member extend from the one edge of said centerbody, said first cantilever beam
10 extending from the central portion of the one edge, said first member extending from the one edge adjacent to one side of said first cantilever beam, said second member extending from the one edge adjacent to the other side of said first cantilever beam.

7. The apparatus of claim 1 wherein each said pin is freely slidable within the
15 corresponding receptacle, and said centerbody includes a projection extending from a planar surface of the centerbody, said projection cooperating with a surface of the receptacle to limit sliding motion of said pin.

8. An apparatus for providing electrical continuity between two objects, comprising:
20 a body with a top surface and a bottom surface, said body defining a plurality of pin receptacles, and;

a plurality of pins, each one of said pins being loosely located within a different one of said plurality of receptacles, each pin including a centerbody with two edges, a first cantilever

beam extending from one edge of said centerbody at an acute angle relative to said centerbody, and a second cantilever beam extending from the other edge of said centerbody at an acute angle relative to said centerbody;

wherein the first cantilever beam of each one of said pins includes a flexible free end that
5 extends over said centerbody of an adjacent one of said pins.

9. The apparatus of claim 8 wherein said centerbody includes projection extending from a planar surface of the centerbody, said projection cooperating with a surface of the receptacle to limit sliding motion of said pin.

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10. The apparatus of claim 8 wherein each said receptacle includes first and second guiding slots, each said centerbody includes first and second members extending from said centerbody and coplanar with said centerbody, and each said first member of each one of said plurality of pins is slidably received within said first guiding slot of the corresponding receptacle
15 and each said second member of said one of said plurality of pins is slidably received within said second guiding slot of the corresponding receptacle to loosely guide said pin within said receptacle.

11 The apparatus of claim 10 wherein said first cantilever beam, said first member,
20 and said second member extend from the one edge of said centerbody, said first cantilever beam extending from the central portion of the one edge, said first member extending from the one edge adjacent to one side of said first cantilever beam, said second member extending from the one edge adjacent to the other side of said first cantilever beam.

12. The apparatus of claim 8 wherein said centerbody includes a planar surface, said second cantilever beam has a free end, and the length from the planar surface to the free end of said first cantilever beam is greater than the length from the planar surface to the free end of said second cantilever beam.

13. The apparatus of claim 12 wherein each receptacle includes an aperture extending from the top surface to the bottom surface.

14. An apparatus for providing electrical continuity between two objects comprising:
a body with top a surface and a bottom surface, said body defining a plurality of pin receptacles, each receptacle including a guiding slot within the body between the top and bottom surfaces, and;

a plurality of pins, each one of said pins being located within a different one of said plurality of receptacles, each pin including a planar centerbody with a first edge, a first member extending from said centerbody and cooperating with the guiding slot to loosely locate each said pin within a corresponding said receptacle, and a first cantilever beam extending from the first edge of said centerbody at an acute angle relative to said centerbody;

wherein said centerbody includes a projection extending from a planar surface of the centerbody, said projection cooperating with a surface of the receptacle to limit sliding motion of said pin within the receptacle.

15. The apparatus of claim 14 wherein the first cantilever beam of a plurality of said pins includes a free end that extends over the centerbody of an adjacent one of said pins.

16. The apparatus of claim 14 wherein said plurality of receptacles are arranged in a
5 matrix of rows and columns.

17. The apparatus of claim 14 wherein each said receptacle includes a second guiding slot, each said centerbody includes a second member extending from said centerbody, and each said second member of each one of said plurality of pins cooperates with said second guiding
10 slot of the corresponding receptacle to loosely guide said pin within said receptacle.

18. The apparatus of claim 17 wherein said first cantilever beam, said first member, and said second member extend from the one edge of said centerbody, said first cantilever beam extending from the central portion of the one edge, said first member extending from the one
15 edge adjacent to one side of said first cantilever beam, said second member extending from the one edge adjacent to the other side of said first cantilever beam.

19. The apparatus of claim 14 wherein said centerbody includes a second edge opposite the first edge, and which further comprises a second cantilever beam extending from the
20 second edge, wherein said first cantilever beam is longer than said second cantilever beam.

20. The apparatus of claim 14 wherein said first cantilever beam has a free state in which a free end of said cantilever beam extends beyond the top surface of said body, a

compressed state in which said free end is elastically deformed to be in the plane of the top surface, and in the compressed state the free end of said pin extends over the centerbody of an adjacent one of said pins.

5 21, A method for establishing electrical continuity in a solderless connection between two object, comprising:

 providing a first object with a first plurality of electrical contacts, a second object with an plurality of electrical contacts, and a connector assembly including a body with an upper surface and a lower surface and a plurality of electrically conductive pins, each pin being loosely
10 retained within the body, each pin including a bendable upper member and a bendable lower member;

 pressing the first object against the plurality of bendable lower member;

 pressing the second object against the plurality of bendable upper members; and

 sliding of the plurality of pins toward the second object by said pressing the first object.

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 22. The method of claim 21 which further comprises:

 elastically deforming the plurality of lower members by a first amount by said pressing the first object; and

 elastically deforming the plurality of upper members by a second amount by said

20 pressing the second object, the second amount being greater than the first amount.

23. The method of claim 21 which further comprises elastically deforming the plurality of upper members by said pressing the second object, wherein at least some of the deformed upper members have a portion which is spaced above a portion of an adjacent pin.